

1 41586/PBH/B600

**VARIABLE TRANSCONDUCTANCE VARIABLE GAIN AMPLIFIER UTILIZING A  
DEGENERATED DIFFERENTIAL PAIR**

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ABSTRACT OF THE DISCLOSURE

Continuously tuning a transconductance. Coupling a  
degeneration resistance from a first source of a first  
10 transistor in a differential pair of transistors to a second  
source of a second transistor in the differential pair of  
transistors. Applying a second variable degeneration resistance  
in parallel to the first degeneration resistance in response to  
the application of a first variable control voltage. And applying  
15 a third variable degeneration resistance in parallel to the  
first degeneration resistance and the second degeneration  
resistance in response to the application of a second variable  
control voltage having a fixed voltage offset from the first  
variable control voltage.

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